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The Pathomechanism of Mitochondrial Diseases

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Message from the Collection Editor

Mitochondrial diseases are a heterogeneous group of common inborn errors of metabolism, originating from pathogenic variants in the mitochondrial or nuclear genome, resulting in respiratory chain deficiency, mostly with devastating consequences. Moreover, mitochondrial dysfunction is associated with numerous other pathological conditions, including neurodegenerative diseases, diabetes, cancer, immune dysfunction, and heart and kidney diseases.

Although next-generation sequencing (NGS) techniques are a game changer in the diagnosis of mitochondrial diseases, they have not significantly resulted in providing better treatment options, which are presently very limited. Studying the pathomechanistic aspects (cell biology and physiology, molecular biology, and biophysics) of the individual diseases in cellular and animal models is a vital step towards developing more effective treatments.

The aim of this Special Issue is to broaden knowledge and understanding of the various pathomechanisms involving mitochondrial dysfunction in disease, including evaluating the effect of small molecules and other treatments in model systems.



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Topical Collection



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